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Since fuel will be transferred from the main and auxiliary tanks on some missions, low level warning lights are provided on the quantity gages for those tanks. The warning device can be set by the operator to give a warning at any desired level. This will help insure that the tanker will retain sufficient fuel for the return flight.

In order to maintain radio silence during the refueling operation, a system of signal lights is provided to inform the receiver pilot when the tanker is ready for contact, when the fuel is flowing, and to signal emergency termination. There is also a light on the tanker control panel to indicate to the operator that the receiver is in contact. All signal lights operate automatically except the emergency termination light, which is actuated by the systems engineer.

Fueling the airplane is accomplished through four 600 gallon per minute fueling points accessible from a standing position on the ground. The airplane can be fueled at the rate of 2400 gallons per minute in approximately 18 minutes.

IFR HOSE AND DROGUE INSTALLATION

The in-flight refueling operation will be accomplished by the probe and drogue method. Hose and drogue equipment is mounted in each of two wing tip pods, which also contains the hose reel and its control, two transfer pumps, a shut-off valve, etc.

The drogue is 31 inches in diameter and of the perforated low drag type. The hose is 3 1/2 inches I.D. and will be of sufficient length to extend 100 feet from the pod. The reel is 24 inches in diameter, single wrap with its axis fore-and-aft, and equipped with a level-wind carriage. The two transfer pumps are mounted in parallel and will supply a total of 1,200 gallons per minute at a pressure of 50 psi at the drogue. The drive for reeling in and applying tension to the hoses is operated hydraulically.

The extension of either drogue is accomplished by opening the drogue door and decreasing the tension on the hose. When the drogue has left the pod, the door is closed leaving only a small opening for the hose. The rate of extension is limited to a maximum of 10 feet per second. As the hose approaches the end of its travel, its rate is automatically decreased to minimize the shock loads.

When the hose reaches the maximum extension, the operator increases the tension to a value just below that necessary to reel the hose in. The response of the reel drive system will allow receiver closing rates up to 10 feet per second without excessive slack developing in the hose.

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